

**Customer No. 27061**  
Confirmation No. 1153

Patent  
Attorney Docket No. GEMS8081.144

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of : Zhou, Yong  
Serial No. : 10/604,154  
Filed : June 27, 2003  
For : METHOD AND APPARATUS TO REDUCE IMAGE INTENSITY  
VARIATION DURING MR DATA ACQUISITION  
Group Art No. : 3768  
Examiner : Angela M. Hoffa

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**CERTIFICATION UNDER 37 CFR 1.8(a) and 1.10**

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**37 CFR 1.8(a)**

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Date: March 17, 2011

/Robyn L. Templin/  
Signature

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Commissioner for Patents  
P.O. Box 1450  
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**PRE-APPEAL BRIEF CONFERENCE REQUEST**

Dear Sir:

Appellant hereby requests review of the Final Office Action mailed November 17, 2010, and the Advisory Action mailed January 21, 2011, in the above-identified Application prior to appeal to the Board. This request is being filed with a Notice of Appeal, with the review being requested for the reasons set forth hereinafter.

**REMARKS**

Claims 1, 3-10, and 12-21 are pending in the present application. Claims 6-10 and 12-21 stand rejected. Claims 1, 4, and 5 are indicated as allowable.

Appellant believes that Pre-Appeal review is appropriate because the Examiner has made a legal error in improperly rejecting claims 6-10 and 12-21 under §112, first and second paragraphs, and that such an error is procedural in nature as the rejections do not properly follow MPEP guidelines.

In the Advisory Action mailed January 21, 2011, the Examiner rejected claims 6-10, and 12-21 under 35 U.S.C. §112, first paragraph, because the specification, while being enabling for increasing the predetermined amount of time as the peripheral region distance from the center region of k-space increases, does not reasonably provide enablement for decreasing the predetermined amount of time as the peripheral region distance from the center region of k-space increases. The Examiner next rejected claims 6-10 and 12-21 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Claims 14-20 were rejected under 35 U.S.C. §112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps.

**Rejections under 35 USC §112, first paragraph****Claim 6**

In the Final Office Action dated November 17, 2010, the Examiner rejected claim 6 under 35 U.S.C. §112, first paragraph, stating that the Specification “while being enabling for increasing the predetermined amount of time as the peripheral region distance from the center region of k-space increases, does not reasonably provide enablement for decreasing the predetermined amount of time as the peripheral region distance from the center region of k-space increases.” *Final Office Action*, November 17, 2010, p. 2. In maintaining the rejection in the Advisory Action dated January 21, 2011, the Examiner further stated that “while the claimed scope includes working embodiments, the claimed scope also includes non-working embodiments” and that “[c]laiming non-working embodiments is not permitted.” *Advisory Action*, January 21, 2011, p. 2.

Applicant respectfully disagrees with the rejection. Specifically, Applicant believes that the Examiner’s statements do not provide a proper basis for a rejection under 35 U.S.C. §112, first paragraph. That is, Applicant nowhere claims “non-working embodiments” as asserted by

the Examiner, as nowhere does Applicant claim a method where the predetermined amount of time is decreased as the peripheral region distance from the center region of k-space is increased. In effect, the Examiner is asserting that the specification fails to enable an element that is not even called for in the present claim, and thus the rejection is clearly erroneous.

As called for in claim 6, the MRI apparatus includes a computer that is programmed to delay a sampling of an MR signal to fill the center region of k-space, with the delay being a function of a distance of an immediately preceding sampled peripheral region of k-space from the center region of k-space. The Specification enables claim 6 by setting forth that the length of delay before sampling the center of k-space increases as the distance from the center of k-space of an immediately preceding sampled region of k-space increases. *Specification*, p. 10, Ins. 19-29. Thus, the Specification does enable claim 6 by disclosing that the delay in sampling is a function of a distance of a sampled peripheral region of k-space from the center region of k-space. As such, that which is called for in claim 6 is properly enabled by the Specification.

In light of the above, Applicant believes that claim 6 is properly enabled by the Specification and thus respectfully requests that the Examiner withdraw the rejection of claim 6 under 35 U.S.C. §112, first paragraph.

#### Claim 14

The Examiner rejected claim 14 under 35 U.S.C. §112, first paragraph. In rejecting the claim, the Examiner employed the same rationale as used for claim 6, again stating that the Specification “does not reasonably provide enablement for decreasing the predetermined amount of time as the peripheral region distance from the center region of k-space increases” and asserting that Applicant is claiming “non-working embodiments.” *See Final Office Action*, supra at 2 and *Advisory Action*, supra at 2.

As set forth above with respect to claim 6, Applicant believes that such statements do not provide a proper basis for a rejection under 35 U.S.C. §112, first paragraph, as the Examiner is in effect asserting that the specification fails to enable an element that is not even called for in the present claim. That is, claim 14 does not call for a predetermined amount of wait time to be decreased as the peripheral region distance from the center region of k-space is increased. Instead, claim 14 calls for, in part, a computer readable storage medium including a set of instructions that when executed by a processor causes the processor to partition k-space into a plurality of partitions wherein one partition corresponds to a center of k-space and the other partitions correspond to peripheral regions of k-space, determine a distance from the center of k-space for each peripheral region, sample a peripheral region, and subsequent to sampling of the

peripheral region, delay the sampling of the center k-space by a predetermined value that is a function of the distance of the immediately preceding sampled peripheral region from the center of k-space. The Specification enables claim 14 by setting forth that the length of delay before sampling the center of k-space increases as the distance from the center of k-space of an immediately preceding sampled region of k-space increases. *Specification*, p. 10, lns. 19-29. As such, that which is broadly called for in claim 14 is properly enabled by the Specification.

In light of the above, Applicant believes that claim 14 is properly enabled by the Specification and thus respectfully requests that the Examiner withdraw the rejection of claim 14 under 35 U.S.C. §112, first paragraph.

**Rejections under 35 USC §112, second paragraph - Indefiniteness**

The Examiner rejected each of claims 6 and 14 under 35 U.S.C. §112, second paragraph. In rejecting the claims, the Examiner stated that “[w]ith the addition of the limitation in claim 1 of ‘interleaving sampling of peripheral regions of k-space and samplings of a center region of k-space...’, it remains confusing if the language of claims 6 and 14 sufficiently encompasses the same feature with their respective amended language.” *Final Office Action*, supra at 3.

Applicant respectfully disagrees with the rejection of claims 6 and 14 under 35 U.S.C. §112, second paragraph. Specifically, Applicant believes that the rationale set forth by the Examiner in rejecting claims 6 and 14 does not provide a proper basis for a rejection under 35 U.S.C. §112, second paragraph, as the Examiner is in effect asserting that the limitations set forth in claim 1 somehow render claims 6 and 14 indefinite. As set forth in MPEP §2163, “[e]ach claim must be separately analyzed and given its broadest reasonable interpretation in light of and consistent with the written description.” In determining whether or not claims 6 and 14 are definite/indefinite under 35 U.S.C. §112, second paragraph, the Examiner must analyze each of the claims separately and in light of and consistent with the written description. Thus, for purposes of determining whether claims 6 and 14 are definite/indefinite under 35 U.S.C. §112, second paragraph, the claims are not analyzed in light of claim 1, as the Examiner appears to indicate in setting forth the rejection under 35 U.S.C. §112, second paragraph, but rather are to be analyzed in light of the written description.

In maintaining the rejection of claims 6 and 14 under 35 U.S.C. §112, second paragraph, in the Advisory Action, the Examiner stated that “[t]he examiner was trying to determine if the same scope of invention was being desired in the apparatus (claim 6) and computer program claims (claim 14) as for the method claim (claim 1).” *Advisory Action*, supra at 2. The Examiner

further stated that “[t]o expedite allowance, it would be very helpful to mirror the language of what has been determined to be allowable” and that “[i]f a different scope is desired for claims 6 and 14, perhaps consider pursuing these claims in a continuation application.” Applicant strenuously disagrees with these additional statements set forth by the Examiner regarding the rejection of claims 6 and 14 under 35 U.S.C. §112, second paragraph. As set forth above, MPEP §2163 states that “[e]ach claim must be separately analyzed and given its broadest reasonable interpretation in light of and consistent with the written description.” It is wholly improper for the Examiner, in determining whether or not claims 6 and 14 are definite/indefinite under 35 U.S.C. §112, second paragraph, to state that claims 6 and 14 are indefinite under 35 U.S.C. §112, second paragraph, because they have a “different scope” than claim 1. The scope of claims 6 and 14, as compared to the scope of claim 1, has no bearing on whether claims 6 and 14 comply with the requirements of 35 U.S.C. §112, second paragraph, as claims 6 and 14 must be analyzed separately from claim 1 and in light of and consistent with the written description.

Applicant believe that when claims 6 and 14 are properly analyzed in light of the written description, that the claims are not indefinite under 35 U.S.C. §112, second paragraph. Applicant therefore respectfully requests that the Examiner withdraw the rejection of claims 6 and 14 under 35 U.S.C. §112, second paragraph.

#### **Rejections under 35 USC §112, second paragraph – Omission of Essential Elements**

The Examiner rejected claim 14 under 35 U.S.C. §112, second paragraph, stating that the claims are “incomplete for omitting essential steps, such omission amounting to a gap between the steps,” and set forth a number of elements omitted from claim 14 that were asserted to be “essential,” citing to MPEP §2172.01 for support of the rejection. *See Final Office Action*, supra at 3. That is, the Examiner stated that “[c]laim 14 is missing the critical component of the center region is sampled at a faster rate than each peripheral region.” *Id.*

Applicant respectfully disagrees with the rejection and believes the rejection to be improper. MPEP §2172.01 limits when an element/limitation can be considered an “essential element,” setting forth that “essential matter” is matter that is “disclosed to be essential to the invention as described in the specification or in other statements of record....” The Examiner has not pointed to any language, either in the specification or in other statements of record, wherein Applicant has stated that specific elements identified by the Examiner as being omitted from the claims are essential elements/steps to the invention as claimed. The Examiner is not at liberty to declare elements as “essential” without some indication by Applicant that the element is so

critical as being required for enablement. Since Applicant has not made any such statements, a rejection of claim 14 under MPEP §2172.01 based on the omission of essential steps is improper.

Applicant also respectfully disagrees with the Examiner's assertion that Paragraphs [0010]-[0012] of the Specification illustrate that the sampling of the center k-space region at a faster rate is an "essential element." *See Final Office Action*, supra at 3 and *see Advisory Action*, supra at 2. While the Specification sets forth that one embodiment of the invention implements an ECTRICKS acquisition in which faster sampling of the k-space center region is employed, nowhere is it set forth in the Specification that such faster sampling is "essential." In fact, Paragraph [0020] of the Application sets forth that "[w]hile the present invention will be described with respect to an ECTRICKS acquisition of MR angiographic data, one skilled in the art will readily appreciate that the present invention is equivalently applicable with MR acquisitions that employ relatively large amplitude gradient pulses prior to sampling a center of k-space," thus indicating that embodiments of the invention are not limited to an ECTRICKS acquisition method where the center region is sampled at a faster rate and indicating that the faster sampling of the center region is not necessarily an essential feature. To the extent that there is an "essential" element in claim 14, it is that, subsequent to sampling of the peripheral region, the sampling of the center of k-space is delayed by a predetermined value that is a function of the distance of the immediately preceding sampled peripheral region from the center of k-space. This "delay in sampling" element is clearly described in claim 14, so as to place claim 14 in compliance with 35 U.S.C. §112, second paragraph.

Applicant therefore believes that the rejection of claim 14 under 35 U.S.C. §112, second paragraph, is improper and respectfully requests withdrawal thereof.

In light of all the above, Appellant respectfully requests withdrawal of the rejection of claims 6-10 and 12-21 under 35 U.S.C. §112, first and second paragraphs. Appellant therefore respectfully believes that claims 1, 4-10 and 12-21 are in condition for allowance.

Dated: March 17, 2011  
Attorney Docket No.: GEMS8081.144

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